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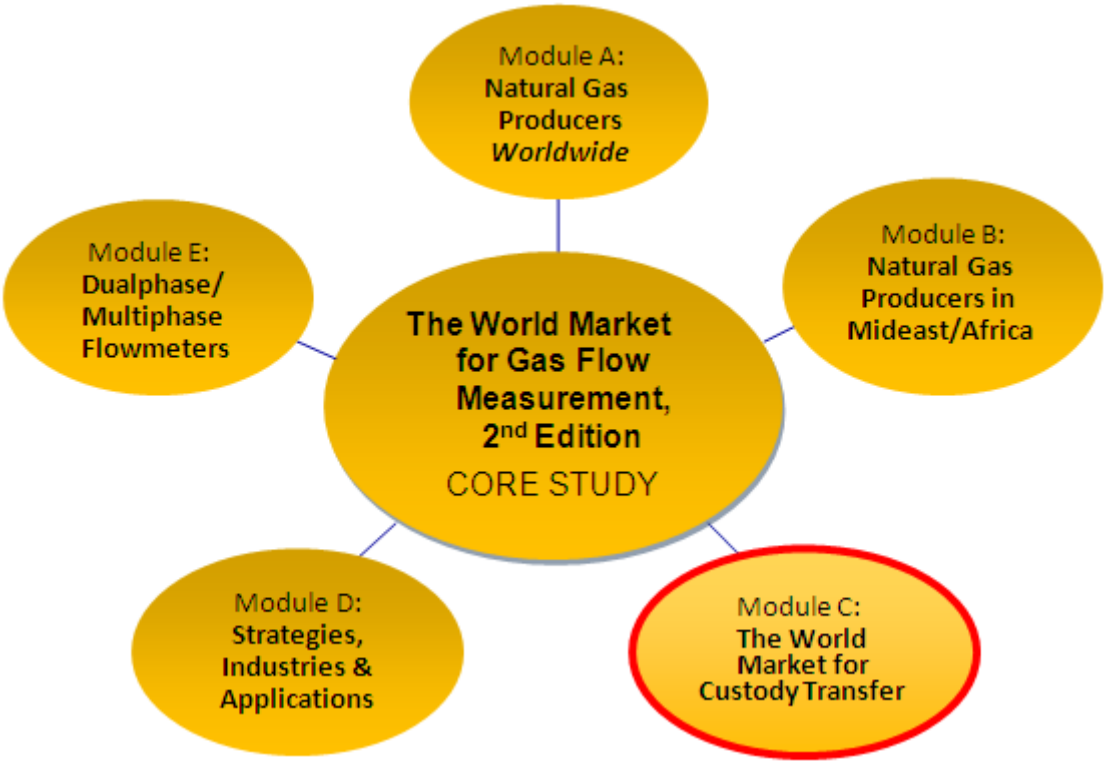
Module C

The World Market for Custody Transfer of Natural Gas

Overview



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Module C:
The World Market for Custody Transfer of Natural Gas

Flow Research is conducting a new study on the worldwide custody transfer of natural gas, ***The World Market for Custody Transfer of Natural Gas.*** This study is Module C of the broader study, ***The World Market for Gas Flow Measurement***, 2md Edition.

The study has multiple purposes:

- To determine worldwide market size and market shares for custody transfer of natural gas in 2010
- To forecast market growth for all types of custody transfer flowmeters through 2015
- To identify the industries and applications where custody transfer flowmeters are used, and to identify market growth sectors
- To provide a product analysis for the main companies selling into the custody transfer flowmeter market
- To provide strategies to manufacturers for selling into this flowmeter market
- To provide company profiles of the main suppliers of custody transfer flowmeters.

Rationale for Study

Flow Research published the 3rd edition of our worldwide study of all flowmeter types in October 2010. We have been reporting on all fourteen flowmeter technologies for more than a decade in our comprehensive studies, in consultation with a wide spectrum of flowmeter manufacturers, by way of our two quarterly publications (*Market Barometer* and *Energy Monitor*), and through our regular contributions to industry journals such as *Flow Control* and *Processing* magazines. We are entirely focused on the business of industrial process flow, pressure, temperature, analytical instrumentation.

The demand for natural gas is increasing substantially. According to the US Department of Energy's Energy Information Administration (EIA), consumption of natural gas is expected to grow significantly through 2016. Custody transfer is obviously one of the most integral steps in the supplier to consumer process chain. Natural gas changes hands, or ownership, at a number of points between the producer and the end-user. These transfers occur at custody transfer points, and are tightly regulated by standards groups such as the American Gas Association (AGA). Other geographic regions have their own regulatory bodies. There are several flowmeter technologies in this market: some are well-established, whereas others are emerging.

Our study has confirmed that Coriolis flowmeters have a steady hold and some forward momentum in the custody transfer market. Coriolis meters are gaining industry approval for custody transfer of natural gas. The AGA has approved a technical report (AGA Report #11) on the use of Coriolis meters for natural gas applications. In addition, several European standards organizations include Coriolis meters on their list of meters approved for custody transfer.

We are also seeing a significant trend occurring in the production and use of ultrasonic flowmeters. This market is one to watch. Ultrasonic flowmeters are still a relatively new technology, though we see the market growing faster than any of the other custody transfer meter technologies. Currently, the ultrasonic flowmeter market is highly fragmented with more than fifty suppliers worldwide. The number of companies who are getting into the ultrasonic flowmeter market continues to grow.

Turbine meter manufacturers are struggling to maintain their wide usage for gas flow applications. However, they still do have a significant cost advantage over ultrasonic meters, especially in the larger pipe sizes. Additionally, turbine meter suppliers are making technology improvements to make their meters more reliable.

The differential pressure (DP) flowmeter market also appears to be holding its own. DP flowmeters still have the largest installed base of any type of flowmeter, and customers appreciate their versatility – they can be used to measure liquid, gas, and steam flows. Manufacturers have been very diligent in researching and developing technological improvements in their products.

Anyone who needs to do custody transfer flow measurement today has a wide choice of technologies and products. New-technology flowmeters such as Coriolis and ultrasonic offer increased reliability, reduced pressure drop, and high accuracy. At the same time, suppliers are making improvements to the traditional technology meters, improving their performance. Turbine flowmeters are being made with stronger bearings, offering longer life. And improvements in pressure transmitters mean greater stability and accuracy when they are used to make pressure or flow measurements.

We believe that this is an optimal time to quantify the existing size and future growth in the custody transfer flowmeter market, and to take an in-depth look at the new technologies,

manufacturers, and applications in what promises to be one of the fastest growing markets in the worldwide flowmeter industry.

Module C contains market data on Coriolis, DP, turbine, and ultrasonic flowmeters for custody transfer of natural gas, compares their use, and projects the growth in these technologies through 2015. What's included:

- Market data on Coriolis, ultrasonic, turbine, and differential pressure (DP) flowmeters used for custody transfer applications
- Market shares worldwide and by geographic region for each flowmeter type
- Shipments by geographic region, industry and application
- Comparison of flowmeter types in custody transfer
- Flowmeter growth projections through 2015
- Strategies for selling into this market

Key Issues Addressed in The World Market for Gas Flow Measurement, 2nd Edition

The core study and its modules address the following key issues:

- What is the technological state of the market today?
- Which applications are growing – and which are not?
- What regions of the world hold the greatest growth prospects – and why?
- Are there new competing technologies to the traditional devices – and what are they?
- What is the current breakdown in use between insertion and inline device types?
- Are there new gas flow measurement standards that must be understood?
- What industries represent the greatest growth potential – and why?
- What are the features that end-users are looking for in gas flow measurement?

Background of Study

Flow Research has followed the flowmeter, pressure, and temperature markets for more than ten years. During this time, we have completed multiple studies on the many flowmeter technologies, pressure transmitters, and temperature sensors and transmitters in use today. Our study on differential pressure (DP) transmitters and primary elements revealed for the first time the actual size of the worldwide DP flowmeter market, including primary elements.

In 2004, Flow Research published a market study on the worldwide gas flow measurement market called *The World Market for Gas Flow Measurement* (www.gasflows.com). This included all flow technologies used to measure gas flow. In 2008, we published a comprehensive study of the worldwide ultrasonic flowmeter market that identified the market for custody transfer of natural gas. This study was called *The World Market for Ultrasonic Flowmeters, 3rd Edition* (www.flowultrasonic.com). And in 2010, we updated all of our

worldwide flowmeter numbers as part of our global study covering all types of flowmeters, *The World Market for Flowmeters, 3rd Edition* (www.floweverything.com). The third edition of this study was just published in October 2010.

Flow Research has been studying the worldwide market for custody transfer of natural gas for the past 1 ½ years. The research included onsite interviews with natural gas suppliers in the Middle East. The purpose of the interviews, which were conducted in the UAE, Saudi Arabia, Qatar, and Oman between September and November 2009, was to identify trends in natural gas flow measurement and to better understand growth in the natural gas market in the Middle East, Europe, and worldwide.

Our ongoing cycle of regularly scheduled editions to individual flowmeter types have focused on both the flowmeter technologies and markets - including both new-technology and traditional technology flowmeters - as well as temperature sensors and temperature transmitters on a regional and worldwide basis. We understand how and why flowmeters perform critical tasks within nearly all instrumentation industries and markets, whether here in North America or beyond.

Our quarterly publications, *Market Barometer* and *Energy Monitor*, serve as regular updates to our knowledge base of the entire range of instrumentation technologies used within the worldwide process control instrumentation market.

In conducting this study, we are contacting all known manufacturers of custody transfer flowmeters worldwide. Flow Research has already identified recent entrants into this growing market and plans to report detailed information about each company. In so doing, we plan to assemble a comprehensive picture of the total custody transfer flowmeter market.

We will be asking ask suppliers to provide detailed information about geographic segmentation, industries sold into, types of flowmeters sold, and many other product segments. As a result, the study will identify where growth is occurring in the market, as well as the underlying factors for that growth. Our already completed end-user survey provides additional perspectives on this market.

Proposed Segmentation

The proposed segmentation for this study is as follows:

Geographic Segmentation

- North America (United States and Canada)
- Europe (including Central Europe and Former Soviet Union)
- Middle East/Africa
- Japan
- China

- Asia without Japan/China
- Latin America (Mexico, Central America, and South America)

Flowmeters by Type
There are two kinds flowmeters included in this study:

- Coriolis
- Ultrasonic
- Turbine
- Differential Pressure (DP)
- Primary Elements

Custody Transfer Flowmeters by Application

- Upstream
- Downstream

Flowmeters by Sales Channel

- Direct Sales
- Independent Representatives
- Distributors
- E-Business

Flowmeters by Customer Type
This flowmeter market will be segmented according to the following customer types:

- End-Users
- OEMs
- Systems Integrators
- Engineers/Consultants

Strategies for Success

- Discussion of market forces at work
- Technical developments
- Strategic action perspectives
- Forming alliances to enhance product offerings

+ Average pricing data
+ The obstacles to growth are described
+ The reasons behind dual phase and multiphase metering success are explained
+ Quantified growth rates are provided worldwide and by region

Market Shares of the Leading Suppliers

This study will provide company market share data in multiple categories. Market share data will be provided for the following geographic regions:

- Worldwide
- North America (United States and Canada)
- Europe (including Central Europe and Former Soviet Union)
- Middle East/Africa
- Japan
- China
- Asia without Japan/China
- Latin America (Central America and South America)

Company Profiles

Complete company profiles on the leading dual phase and multiphase flowmeter suppliers will be included.

The following is a partial list of the companies to be profiled in this study:

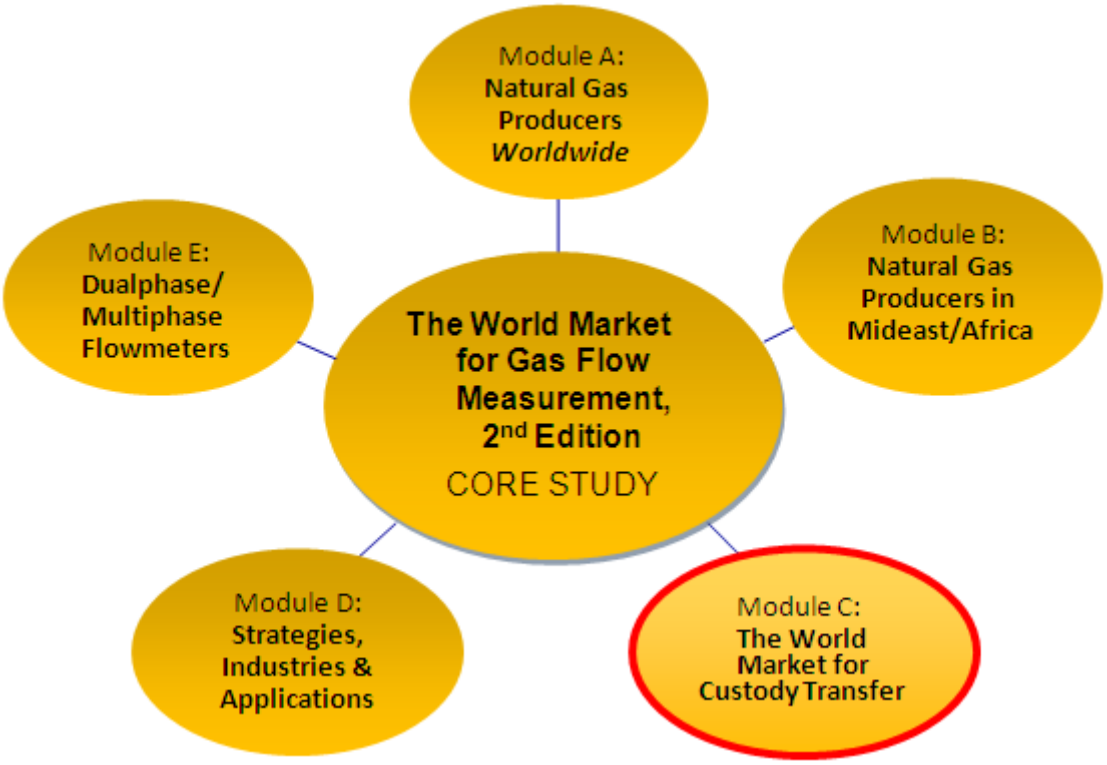
- ABB
- Canalta Controls
- Elster-Instromet
- Emerson Process Management (Daniel, Micro Motion, Rosemount)
- Endress+Hauser
- Honeywell
- FMC Technologies
- KROHNE
- Sick
- Siemens
- The Measurement Company

Publication Date

The target date for publication of this study is Q2 2011. It is part of two clusters of studies on oil and gas measurement that are described on the following pages.

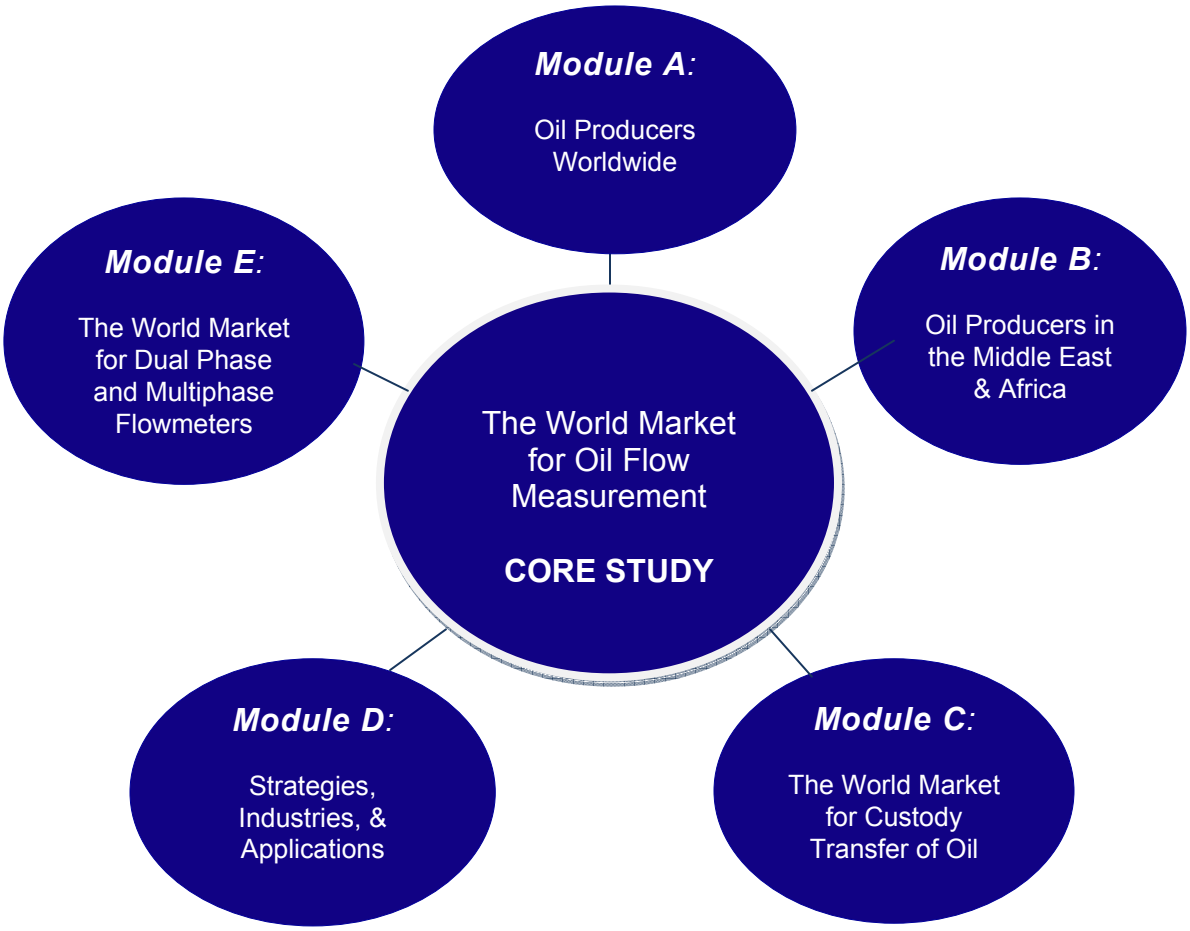
The World Market for Gas Flow Measurement, 2nd Edition

A Modular Approach to the Gas Flow Market



The World Market for Gas Flow Measurement, 2nd Edition features a core gas flow measurement study, and five modules that can be ordered as add-on or standalone reports. Together they provide a comprehensive picture of the gas flow market from multiple perspectives. The in-depth research in the modules complements and builds on the detailed results of the core study.

The World Market for Oil Flow Measurement



Founding Sponsorships

We are offering the opportunity for companies to become Founding Sponsors of this study. Benefits of being a Founding Sponsor include being able to participate in determining study scope and direction, being sent regular updates on study progress, and receiving a favorable discount pricing package. The Founding Sponsor program is explained for your consideration later in this document.

In the meantime, please review the segmentation and let us know if there is any additional segmentation you would like to see, or if you would like to propose changes to the existing segmentation. Thank you in advance for your input, and we hope to hear from you!

Background

Dr. Jesse Yoder is President of Flow Research Inc., a company he founded in 1998. Dr. Yoder has 24 years of experience as a writer and an analyst in process control and instrumentation. Since 1990, he has written more than 110 market research studies, most of them about flow and instrumentation. A selection of recent and scheduled Flow Research studies include the list on the following page.

Recent and Scheduled Flow Research studies:

Volume I	The World Market for Coriolis Flowmeters, 4th Edition (December 2011)**
Volume II	The World Market for Magnetic Flowmeters, 4th Edition (May 2009)
Volume III	The World Market for Ultrasonic Flowmeters, 4th Edition (October 2011)**
Volume IV	The World Market for Vortex Flowmeters, 3rd Edition (July 2010) *New release*
Volume V	The World Market for DP Flowmeters and Primary Elements (January 2007)
Volume V-A	The World Market for DP Flow Transmitters (September 2007)
Volume V-B	The World Market for Primary Elements (September 2007)
Volume VI	Worldwide Survey of Flowmeter Users, 2nd Edition (January 2006)
Volume VII	The World Market for Positive Displacement Flowmeters (Q2 2011)**
Volume VIII	The World Market for Turbine Flowmeters (May 2011)**
Volume IX	The World Market for Pressure Transmitters, 3rd Edition (May 2011)**
Volume X	The World Market for Flowmeters, 3rd Edition (October 2010) *New release*
Volume XI	The World Market for Gas Flow Measurement, 2nd Edition (Q2 2011)**
Volume XII	The World Market for Steam Flow Measurement (March 2008)
Volume XIII	The World Market for Mass Flow Controllers (July 2008)
Volume XIV	The World Market for Thermal Flowmeters (October 2009)
Volume XV	The World Market for Liquid Analytical Instruments (Feb. 2011) *New release*

***Studies in progress* These studies are described at www.flowresearch.com/flow.htm

Dr. Yoder has also written more than 120 articles on flow and instrumentation for trade journals. Links to many of these can be found at www.flowresearch.com/articles.htm.

Norm Weeks, Senior Market Analyst, joined Flow Research in 2004 after a 24-year stint with Verizon. At Verizon, Norm specialized in creating innovative customer solutions, product management, and product marketing. He is now a fulltime market analyst for Flow Research, has completed several studies, and regularly contributes articles and editorial assistance to our *Market Barometer* and *Energy Monitor* publications.

Belinda Burum, Vice President and Editor, has worked in high tech for 16 years as a technical writer and marketing communications manager. She joined the company in 2002, and has since then worked on many projects. She has a strong customer focus. In addition to her work on market studies, Belinda is serving as associate editor of the *Market Barometer* and the *Energy Monitor*.

Besides writing and publishing studies of this type, Flow Research specializes in user surveys that include a detailed analysis of customer perceptions. In addition, Flow Research provides quarterly updates on the flow and energy industries in the **Market Barometer** and the **Energy Monitor**. The **Energy Monitor** analyzes the current state of the oil & gas, refining, power, and renewables industries, and the implications for instrumentation supplier. Both reports are part of the Worldflow Monitoring Service; more details are available at www.worldflow.com. For more information on Flow Research, please visit our website at www.flowresearch.com.

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The Flow Research *Founding Sponsor Program*

To produce studies that most closely match our clients' needs, Flow Research instituted the Founding Sponsor Program. This program enables companies who wish to participate at a high level in a study's research to influence its scope and segmentation. In addition, Founding Sponsors receive regular updates from Flow Research on study progress, and receive a significant discount on the regular price of the study.

Procedure: Early in the planning phase of a study, Founding Sponsors receive a proposal that includes the proposed segmentation. Founding Sponsors can propose additional segmentation, and can also suggest changes to the proposed segmentation. While the decision to adopt particular segmentation ultimately lies with Flow Research, and is based on input from all contributors, we will do our best to accommodate the specific needs of each of our clients.

During the research phase of a study, Flow Research will issue regular reports that provide updates on the progress of the research. These reports will be sent to Founding Sponsors, who are then invited to provide any additional input or comments into the study.

Being a Founding Sponsor requires making an early commitment to purchase the study. However, in return, Founding Sponsors receive a significant discount off the regular price of the study. Payment can be made either in one amount at the beginning of the study, or split into two, with the second payment due upon delivery of the study.

For additional details, or to find out how the Founding Sponsor program applies to any particular study, please contact Flow Research. We look forward to working with you!

If you have any questions about the Founding Sponsor program, please contact Norm Weeks at [1] 781 245-3200, or norm@flowresearch.com.

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Why Flow Research?

- We specialize in flowmeter markets and technologies
- We have researched all flowmeter types
- We study suppliers, distributors, and end-users
- Our worldwide network of contacts provides a unique perspective
- Our mission is to supply the data to help your business succeed

www.CustodyTransfer.com